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ABSTRACT

Similarities and differences in language acquisition and variations in patterns of language dominance were studied with three four-year-old girls. The ideographic study of child speech involved a monolingual English-speaking child, a monolingual Spanish-speaking child, and a bilingual English-Spanish-speaking child. The following measures were used: auditory comprehension, syntax and morphology, and temporal analysis (speech rate, pauses, and hesitation phenomena). Formal testing supplemented observation of children's speech in natural settings. Testing sessions were conducted approximately every 6 months and when the bilingual child had extended exposure to either language. Data were collected in the United States and in Mexico. Certain similarities have been found in monolingual and bilingual development. Bilingual development is both enriched and affected negatively by the constant exposure to two languages: enrichment takes place in vocabulary and facility with language, while morphology and syntax are affected negatively (in both languages) by the interference of one language system with the other. (SW)

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MONOLINGUAL AND BILINGUAL DEVELOPMENT PATTERNS

Teresa H. de Johnson

Experimenter shows picture of child eating cookies:

E: El niño se va a comer todas las galletas, ahora todas las galletas han sido...(The child is going to eat all the cookies, now all the cookies have been...)

L and E: en su panza (in his tummy).

Bilingual subject and E, during Spanish testing session:

E: Apunta a la media manzana. (Point to the half apple)

E: (While pointing correctly) That's what I want, do you have any apples?

E: Here is one foot, here are two...

E: Piuuu, they stink. (After repetition of stimulus sentence)

Here are two foots.

Child language acquisition has been the subject of study from many points of view, using different measures as indices of development. One of the most extensive reports on this type of research is Brown's (1973) where he describes 5 stages of linguistic development, using a Mean Length of Utterance based on number and type of morphemes used by the subject. Syntactic complexity has been used by Menyuk (1969), Bloom (1970) and Lee (1971), among others. Descriptive analyses of child language acquisition have been given by Slobin (1971) and McNeill (1966) to cite only two. Studies of monolingual development in Spanish are limited in number: Gonzalez (1970) used Mean Length of Utterance, Kernan and Blount (1966) analyzed usage of certain morphemes as indicators of linguistic

development in Spanish, using a task similar to Berko's (1958) who had used pictures to elicit certain English morphemes from 5 to 7 year old children. A study of simultaneous acquisition of Spanish and English, Padilla and Liebman (1974), used methodology similar to Brown's (1973) to identify developmental stages of three children acquiring English and Spanish at the same time. Other studies such as Swain's (1972) have focused on the acquisitions of certain syntactic patterns, in this case yes/no and wh- questions. But, as the children's quotes just given illustrate, what the experimenter is looking for, and what is going on in the child's mind, and which may or may not be expressed linguistically at that moment, is not always the same. Chomsky (1964) stated: "If anything far-reaching and real is to be discovered about the actual grammar of the child, then rather devious kinds of observations of his performance, his abilities, and his comprehension in many different kinds of circumstances will have to be obtained, so that a variety of evidence may be brought to bear on the attempt to determine what is in fact his underlying linguistic competence at each state of development (p. 36)."

It is with these considerations in mind that this study was designed to assess the similarities and differences in monolingual and bilingual development and the patterns of language dominance. This research was begun at approximately age four of the subjects, since it was felt that it was at this point, when the subjects had mastered most of the basic structures of their languages and had sufficient cognitive development to express ideas, relationships, etc., that a cross-linguistic study, with multiple measures and different types of observation, would be most fruitful for the formulation of the theoretical framework of linguistic

and cognitive development, especially to understand the rule-making abilities of the speaker/hearer.

The hypotheses to be tested were the following: 1. The pattern, while not the timing, of development of linguistic skills is approximately the same for monolingual and bilingual children; and 2. Both enrichment and interference will be observed in the bilingual child: enrichment will take place in vocabulary and facility with language, while morphology in syntax (in both languages) will be affected negatively by the interference of one language system with the other.

Subjects. Three four-year old females comprise the subjects of this study: Lorena, monolingual from Mexico; Lara, monolingual English from St. Louis, Missouri; Erika, bilingual English-Spanish being raised both in the United States and in Mexico. By the time of the last set of tests and observations reported here, the children were 5.3, 4.7, and 5.0 years old. Socio-economic factors were controlled for, as they have been shown to affect linguistic development. All three subjects have college-educated parents, with similar socio-economic backgrounds. Both monolingual children are growing up in exclusively monolingual homes, while the bilingual child is exposed to both languages at home, and also has extensive exposure to one language or another either by visits of monolingual relatives or by summer-long stays in Mexico each year.

Method. Several measures are studied in an effort to obtain data on several aspects of linguistic development: Data on auditory comprehension, not just of vocabulary items, but also of language structures,

which gives an indication of receptive language skills; measures on syntactic and morphological development which indicate the degree of internalization of grammatical patterns as evidenced by responses to test items and usage in spontaneous speech. These measures, while assessing performance, are aimed at an understanding of the underlying competence of the speaker/hearer. Other measures such as temporal analysis and the study of hesitations found in the speech produced focus on the actual performance of the child in an effort to integrate the cognitive and linguistic behavior at the moment of speech production.

Materials. Tests for auditory comprehension: The first part of this study used Carrow (1968) Auditory Test for Language Comprehension both for Spanish and English. To avoid artificially higher scores due to practice effect, different tests for auditory comprehension were used: New York City's Language Assessment Battery, Level 1, Test 1: Listening and Speaking. This test has norms for both English and Spanish. The Boehm Test of Basic Concepts and Prueba Boehm de Conceptos Básicos, Form A, were used to further assess auditory comprehension of English and Spanish.

Morphology. The grammatical closure subtest of Kirk's Illinois Test of Psycholinguistic Abilities was used. Incomplete verbal expressions are completed by the child, making use of the redundancies of oral language which help the child acquire automatic habits of handling syntax and grammatical inflections. This test does not have a Spanish form, so the stimulus sentences were translated. Careful interpretation of results is necessary, and obviously norms for English speakers cannot be applied to Spanish. Eight items were not of the same morphological difficulty,

for instance: sheep-sheep is later in emerging than the regular plural oveja-ovejas.

A note of caution should be inserted here, as it was found in the review of several assessment instruments designed for bilingual use that certain subtleties and cultural aspects of the languages were not always adequately taken into consideration.

Syntactic complexity. Developmental Sentence Analysis (Lee, 1971) and Developmental Assessment of Spanish Grammar (Toronto, 1973) were used. Both tests use the same methodology: analysis of a child's spontaneous speech by assigning weighted scores to a developmental order of pronouns, verbs, negatives, conjunctions, yes/no questions and wh- questions. The Spanish test is not a mere translation of values, rather it assigns weighted scores to six grammatical categories taking into account Spanish developmental patterns.

Temporal analysis and study of hesitations. The production of speech takes place over time. The study of temporal parameters and vocal hesitations in spontaneous speech offers a more complete understanding of the speaker's behavior, one which reflects both the cognitive and the linguistic processes occurring at the moment of speech production. This approach provides the necessary insights for a more complete analysis of the semantic and syntactic structure found in the produced discourse. A basic premise of this approach is that silent pauses and vocal hesitations are lawful phenomena and reflect communicative functions. Speech rate, pauses and hesitations exhibit a true developmental pattern, as indicated by several years of research with subjects from 6 to 65 years of age by O'Connell and associates (Sabin, Clemmer, Kowal and O'Connell,

1978). Temporal analysis and study of hesitations were made according to the methodology used by O'Connell and associates. Tape recordings were transferred to a Brüel and Kjaer Audio Level Spectrometer which yields a graphic record of the acoustic energy in terms of amplitude over time and from which speech rate and location and length of silent pauses can be determined.

Stimulus. Illustrated story books of familiar stories such as Goldilocks and the Three Little Bears, Cinderella, and Snow White were used to elicit spontaneous narratives. The amply illustrated books helped provide unity to the children's stories. Conversation about Christmas and home situations provided a different type of spontaneous speech.

Procedures. The auditory comprehension tests, the grammatical closure subtest, and the syntactic development tests were administered according to instructions. Spontaneous speech was elicited and recorded on a portable Wollensak cassette tape recorder. Sessions took place in several settings to allow for different behavior on the part of the subjects: observation of subjects at play, conversations with peers.

Results. A positive linear correlation between age and scores was expected due to maturation of subjects. Of more importance are the patterns of similarities and differences presented. An exact comparison of scores in auditory comprehension cannot be made, as different tests were used as mentioned before. However, at the time of the first testing, all three children scored well above the mean: the same results are evident in the second set of tests. From a possible score of 20 in test 1 (Listening and Speaking parts) of the Language Assessment

Battery, the scores of the children in this study were: Lara, 20; Lorena, 19; Erika, 20 (Eng.), 18 (Sp.). This same pattern is evident in the results obtained in the Boehm tests: High scores for all subjects: Lara, 34; Lorena, 38; Erika, 48 (Eng.), 43 (Sp.). The bilingual subject had obtained higher scores in the Carrow test, and this is confirmed by the Boehm results, where auditory comprehension is higher for the bilingual subject in both languages. Perhaps this is one area where the bilingual's "facility with language" is evident. Further research is needed to confirm these findings.

Morphological development. Increased skills are evident in the higher scores obtained in January, 1978, as compared with those of June, 1977. This development of skills was evident both in spontaneous speech and in testing situations. A certain amount of inconsistency is to be expected in the children's performance in tests and in spontaneous speech, as the conversational load often demands greater skills than isolated test items. Developmental patterns were evident by consistent correct use of items such as men (vs. mans in June '77), children (vs. childs in June '77). Item analysis of the grammatical closure sub-test contributes further evidence of this developmental pattern, since once an item has been used correctly, there is no error at a later time, thus showing internalization of the grammatical pattern. Timing in the pattern of development was hypothesized to be different for monolingual and bilingual subjects and the bilingual child's continued use of *sabo and lack of consistency in the use of gender in Spanish: "*La puerta está abierto" after her Spanish counterparts have gone to sé and correct agreement of noun and adjective is one example of difference in timing. Both the

monolingual and the bilingual children arrive at correct forms, but not in the same time spans. A finding of interest is provided by the Spanish morphology scores: Bilingual child: June, 12; September, 20; January, 26. Monolingual child: September, 16; January, 25. While the progress of the bilingual child is more dramatic due to extended exposure to Spanish, the same level of accomplishment is achieved at certain points. This indicates the greater internalization of the "weaker" language which takes place in the bilingual child as both maturity and cognitive development advance, so that linguistic skills are less affected by mere exposure to language. English performance of both monolingual and bilingual children are approximately the same, as expected, since the bilingual child is being raised primarily in the States, and therefore English can be considered to be the "stronger" language.

Syntactic complexity. The advances in morphological development are reflected in the greater syntactic complexity shown by all three children. Not only are the scores higher, two areas are worthy of note: Lee's scoring technique includes one extra point for well-formed sentences, a point which was not obtained several times in the English samples in June, while only two sentences were not considered correctly formed in the January samples: *gotted and *winned being the more obvious mistakes. The sentences were usually longer, through a greater use of conjunctions; this accounts in a large part for the higher scores. Greater use of interrogative reversals, verbs in the subjunctive in Spanish, although more inconsistently used by the bilingual child, were the more salient differences between the June, 1977 and the January, 1978 samples. Disfluencies such as false starts are usually not included in the sample

for scoring, but, as will be remarked in the analysis of hesitations, the percentage of syllables used for hesitations decreased as the linguistic skill increased.

Temporal analysis. Speech rate, the number of syllables per second, was well within the range reported by other studies for young children. No change was expected, as variation is often associated with task performed: retelling, reading, narration, rather than with a six month span of chronological age. Samples range between 2.00 and 2.96 syls/sec. O'Connell and associates report a mean of 2.15 syls/sec. for six year old children. A low 1.51 syls/sec. was obtained by the bilingual child in June, prior to her summer-long stay in Mexico. After three weeks in an all-Spanish environment, however, her speech samples yielded a 2.10 syls/sec. speech rate, and in September, 2.54 syls/sec. The stability of the speech rate measure mirrored the internalization of the Spanish language system in the bilingual child's performance.

Vocal hesitations. False starts, parenthetical remarks, repeats and filled pauses were analyzed. The early developmental stage of the children under study is most evident in the analysis of hesitations found in the speech samples: false starts are the most common hesitation, accounting for the largest number of hesitation syllables. This is indicative of the limited cognitive capacity of five year olds and their desire to say so many things that they go on to another sentence before finishing the first one. Another factor that accounts for the false starts is a speaker's competence, or knowledge of grammar, as the speaker/hearer monitors his own speech, which causes him to change an incorrect utterance: I kept told telling her, *di que lue y luego le dijo*. Many

such examples are found at this level of development.

Repeats are the second most used hesitation device, in contrast with parenthetical remarks, a device used by the speaker who relies on overlearned language patterns to continue speaking while simultaneously devoting his attention to other cognitive or linguistic demands. This requires greater linguistic skills and develops at a later age.

While instances of parenthetical remarks, false starts and repeats present the same pattern both for monolingual and bilingual children, a fourth hesitation device, the filled pause, appears to be language specific. Filled pauses: mm, er, ah, are usually not found in Spanish. Several instances of filled pauses were found in the English samples, but none were found in the bilingual child's Spanish speech samples. Thus not only are linguistic features internalized and used appropriately by the bilingual speaker, but also paralinguistic aspects of communication. Both Spanish speakers used "este", perhaps the most commonly used parenthetical remark in Spanish. It is possible to say that "este" serves as the filled pause of the Spanish language.

A last measure to be considered is word length, which shows remarkable stability according to language spoken: shorter word length for English samples due to the large number of monosyllabic words found in English, longer word length for Spanish samples, regardless of speaker. This is another indication of similarity of pattern of development for monolingual and bilingual speakers of English and Spanish. It has been suggested* that some of these findings should be tested with bilinguals of Indo-European and non-Indo-European languages, in order to ascertain

whether these patterns are consistent, or perhaps rather a commonality of the two languages being studied here: English and Spanish.

This study is designed to continue through age seven of the subjects. As patterns emerge, the inter-play of cognitive and linguistic skills is in evidence. It is the understanding of the complexity of the behavior of the speaker/hearer and the variety of evidence obtained that will result in better understanding of the underlying principles of language acquisition that at present appear to be the same for the subjects under study, perhaps because of the more universal pattern of cognitive development of which language partakes.

Chukovsky (1968) in his poetic description of child speech states: "It took me some time to realize that not only is children's speech splendid in itself, but this speech also has an intrinsically high instructive value. By studying it, it is possible to discover the whimsical and elusive laws of childhood thinking." And this, perhaps, is the main point to be made: they are whimsical, and they are elusive. Hence the necessity for multiple measures and for cognitive and linguistic factors to be taken into consideration.

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(This study will continue through age seven of youngest subject. Tests and observations are conducted approximately every six months.)

*Dr. Walburga von Raffler-Engel, personal communication.
(Vanderbilt University)

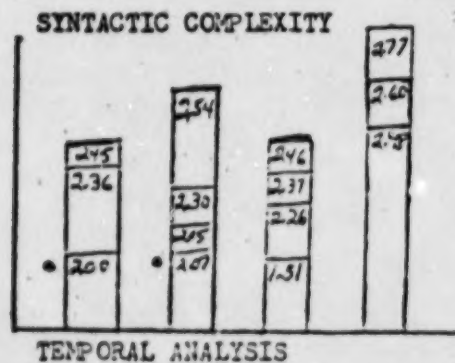
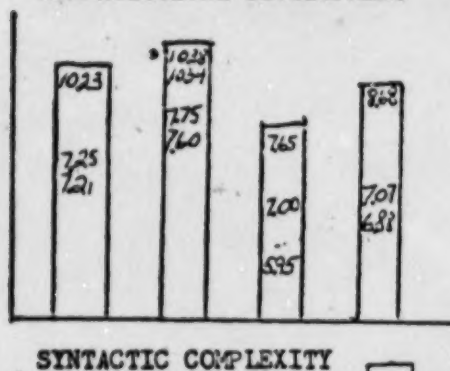
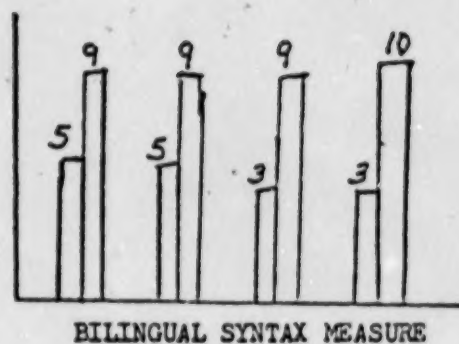
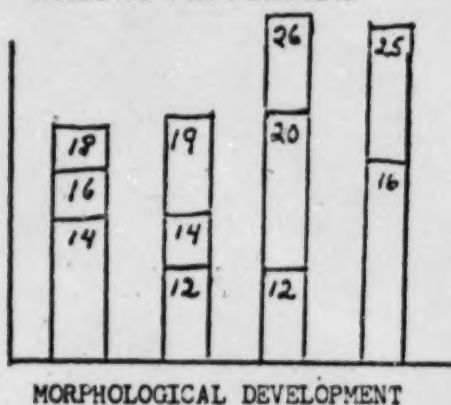
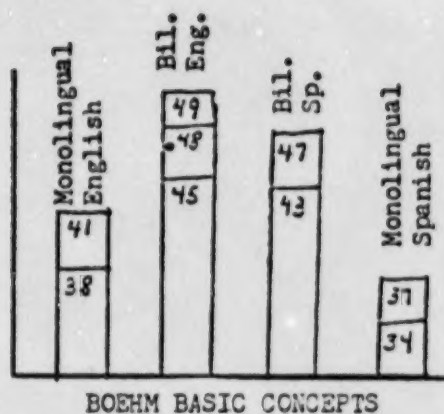
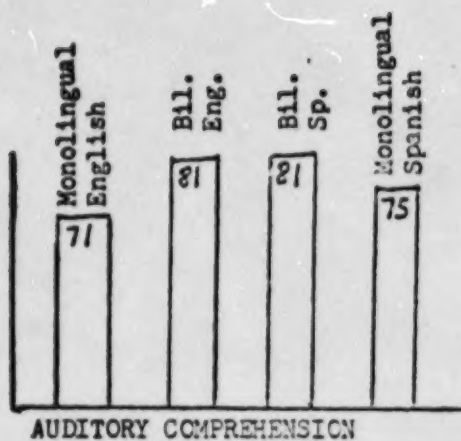
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• Not in chronological order